

FUJINON LENS

XT17×4.5BRM-K14

OPERATION MANUAL

Before using this product, please read this operation manual carefully, and keep the manual handy for future use.



Design and specifications are subject to change without notice.

FOR YOUR SAFETY USE

This content explains important notices for all the users to use this product safely. Read the content carefully before using, and follow the instructions.

The following signs of  WARNING and  CAUTION show:

WARNING

Indicates the possibility of causing death or serious injury when misused.

CAUTION

Indicates the possibility of causing injury or substantial damage when misused.

WARNING

- ◆ Do not moisten inside of the appliances. It may cause fire or electric shock. If the incident occurs, shut off the power supplied to the lens immediately.
- ◆ Be sure to attach all the parts securely. Dropping any parts from a height may cause severe accidents.
- ◆ Do not look at any sorts of strong illuminant such as the sun through the lens. Eyes could be harmed.

CAUTION

- ◆ Take care when carrying the lens. Dropping the lens while carrying may cause injury.
- ◆ Be sure to confirm that the camera to be used with the lens system (lens and accessories) is able to supply sufficient electric power to the lens system. If not, the lens system may not work normally and the camera will be damaged. The values of the power consumption of the lens and the accessories are described in “Specifications” section of their operation manuals.
- ◆ Before supplying the power to the lens, make sure all the parts are connected correctly.
- ◆ In order to install or release a cable, be sure to hold the joint part. Do not damage the cable by gripping. It may cause fire or electric shock.
- ◆ If any sorts of incidents such as unusual smoke, noise, smell or obstacles are found, shut off the power supplied to the lens and detach the lens from the camera immediately. Please notify our sales agent or Fujinon service department as soon as possible.
- ◆ Do not remodel the instrument: it may impair the functions of product or cause electric shock.

FOR YOUR SAFETY USE

NOTICE

- ◆ Lens and its accessories are extremely precise instrument, then be sure not to apply the strong impacts to them. If the lens is of a type in which the rear lens protrudes from the flange surface of the lens mount, be sure not to apply impact to the lens part when installing or releasing.
- ◆ There may be a case that the glasses of the lens mist when the lens is carried from a cool place to a place of high temperature and high humidity. To avoid a mist on the glasses, before moving the lens, let the lens adjust to the ambient temperature of the place where the lens will be used.
- ◆ Be sure not to apply impact to the front part of the lens when operating the camera.
- ◆ Put the cap on the lens while the camera is not used.
- ◆ If an accessory to be attached to the lens is equipped with a mechanical drive relaying part, before attaching it, check the joint part and get rid of all obstacles. If there are any unusual conditions, please contact our sales agent or Fujinon service department immediately.
- ◆ When the lens is used in the weather of fog, raining, or snowing, cover up the lens to prevent it from the water.
- ◆ To minimize the impact to the lens in transportation, set the zoom to the wide end and the focus to the infinity side end before releasing the lens from the camera.

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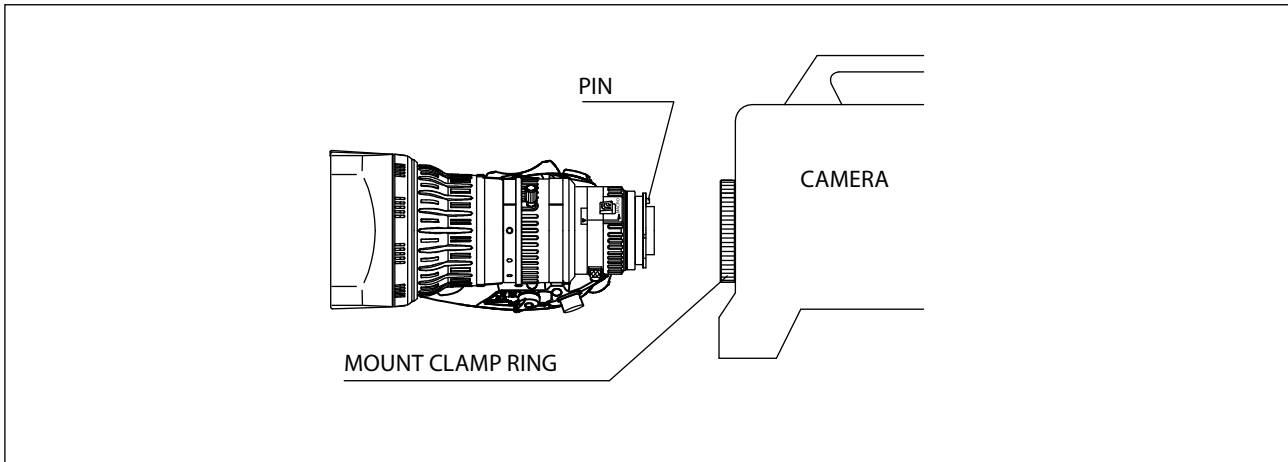
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Note. The products shown in the illustrations in this manual may differ from their actual shapes.

GENERAL DESCRIPTION

This lens is a bayonet mount type zoom lens developed for a color TV Camera.

INSTALLATION ONTO CAMERA



Note. Prior to installation of the lens, turn off the power of the camera.



WARNING

Be sure to attach all the parts securely. Dropping any parts from a height may cause severe accidents.

- a. a. Take the rear lens cap off.
- b. Rotate the mount clamp ring on the camera fully counterclockwise.
- c. Fit the mounting surface of the lens to that of the camera aligning the pin on the lens with the slot in the camera.
- d. Rotate the mount clamp ring fully clockwise.
- e. Connect the cable of the lens to the connector, provided for the lens, on the camera.

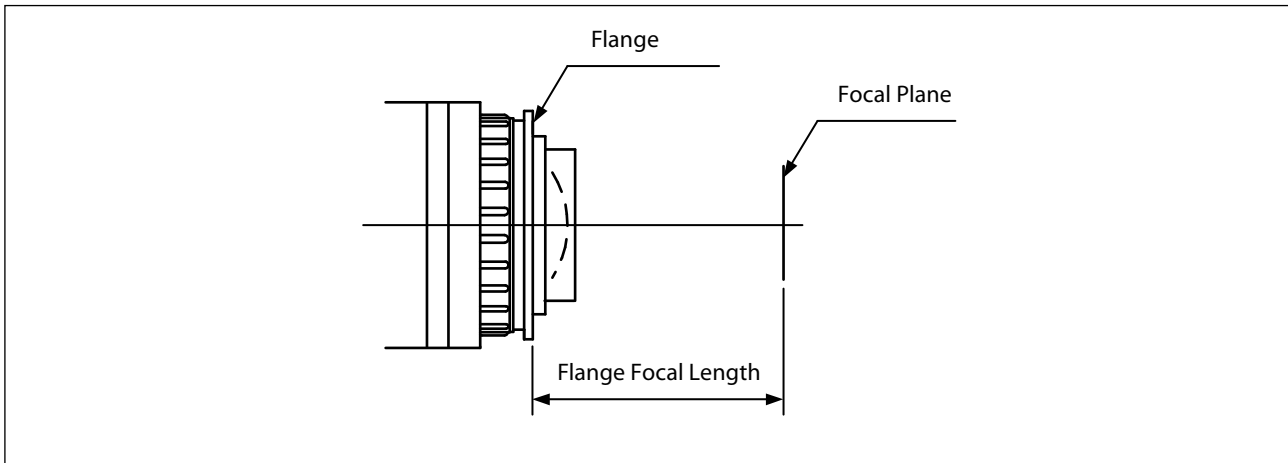
Note. Make sure to adjust the flange focal length when installing the lens on a camera for the first time or installing it on another camera (refer to the next page for details).

If the flange focal length between the lens and the camera is not adjusted precisely, it will affect the shot because the object will be out of focus during a zoom operation. Also, the optimal optical performance of the lens will not be achieved.

ADJUSTMENT OF FLANGE FOCAL LENGTH

The flange focal length is the distance from the flange (mounting surface) of a lens to the focal plane.

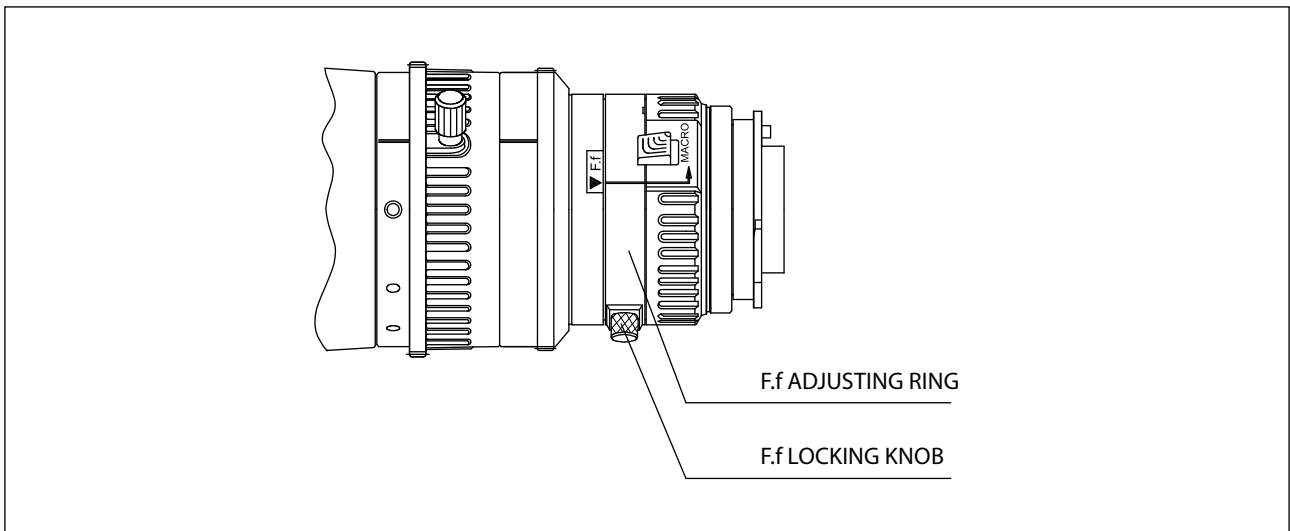
If the focal plane of the lens does not coincide with the image plane of the camera, the object will be out of focus during a zoom operation. To prevent this from happening, the adjustment of the flange focal length is required. Make sure to carry out the adjustment when installing the lens to a camera for the first time or installing it to another camera.



■ CONDITIONS OF OBJECT AND DIAPHRAGM

1. **Object:** cut “Siemens Star” off at the end of this manual and use it as an object
2. **Distance of Object:** about 3 meters
3. **Diaphragm:** open or as near to open as possible

Note. The depth of field decreases by opening the aperture of the lens, and it becomes possible to focus on an object more precisely. To precisely adjust the flange focal length, carefully adjust the focus as much as possible.



■ ADJUSTMENT

After installing the lens to the camera and turning it ON, perform adjustment by watching the monitor of the camera. For the operation of focusing and zooming, refer to “Focus Operation” and “Zoom Operation” (pages 7 and 8).

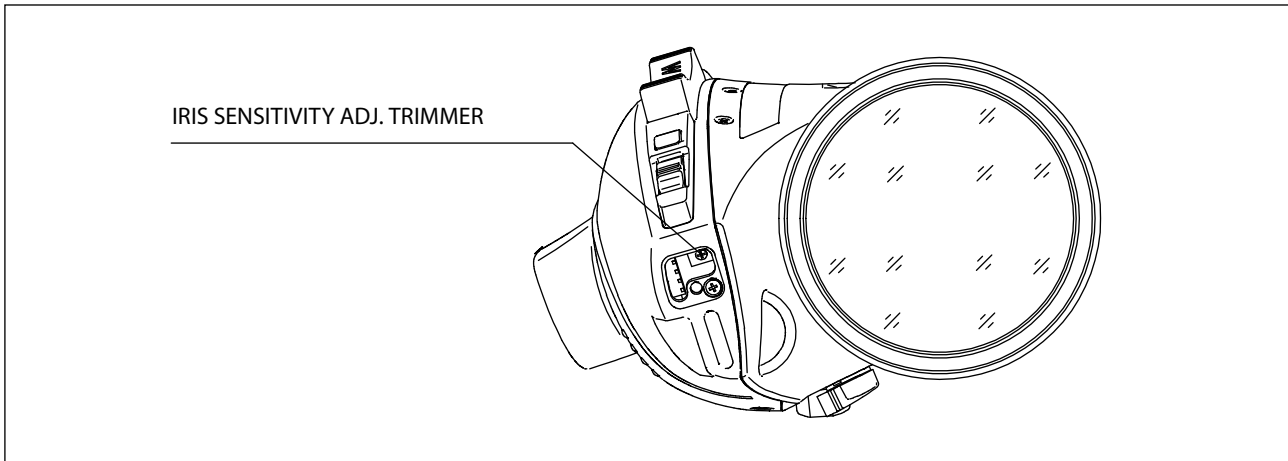
- a. Loosen the F.f locking knob by rotating it counterclockwise.
- b. Operate the zoom to set it to the wide end.
- c. Rotate the F.f adjusting ring using the F.f locking knob to focus on the Siemens Star located approximately 3 meters away. The position where the radial black and white lines become sharpest is the optimum focus position.
- d. Operate the zoom to set it to the telephoto end.
- e. Operate the focus to bring the object into focus.
- f. Operate the zoom to set it to the wide end again, and check that the optimum focus position adjusted in step ‘c’ is kept.
- g. To adjust precisely, repeat the above steps ‘b’ through ‘f’ several times.
(If the most optimum focus position usually holds in all zoom areas, the flange focal length is adjusted precisely. If it is not focused, the flange focal length is not adjusted sufficiently. In this case, start adjusting again from step ‘b.’)
- h. Finally tighten the F.f locking knob firmly.

IRIS ADJUSTMENT

Since the iris is precisely adjusted at the factory before shipment, normally the readjustment is not required. But when an abnormality occurs for some reason, the readjustment can be made as described below.

The adjusting trimmer becomes visible inside the drive unit by removing the cap at the front of the drive unit.

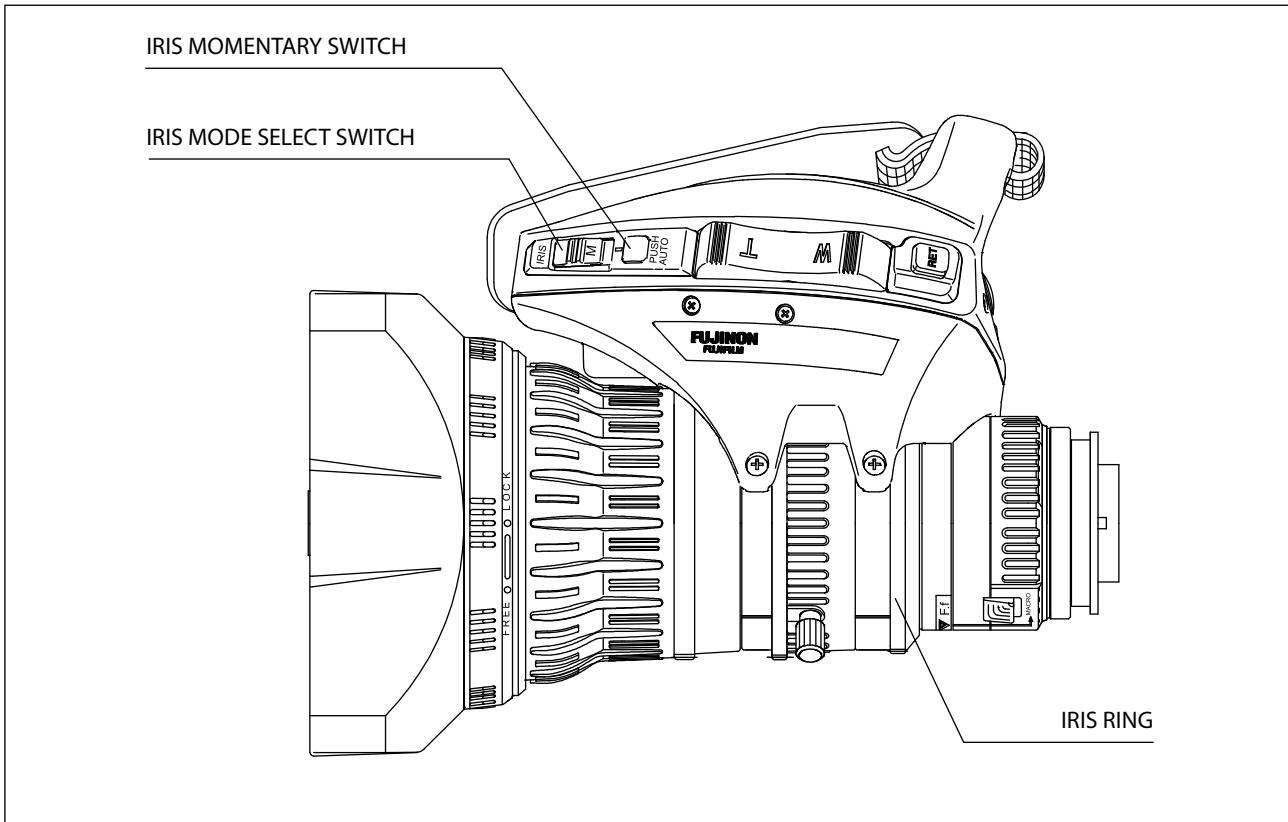
Use a small screwdriver or similar implement to rotate the trimmer.



■ IRIS SENSITIVITY ADJUSTMENT

Rotate the iris sensitivity adjusting trimmer clockwise for higher sensitivity and counterclockwise for lower sensitivity. When obtaining higher sensitivity, be careful not to cause hunting.

IRIS OPERATION



There are two iris operation modes: auto iris mode and manual mode. For the operating instruction in each mode, refer to the description on each mode.

■ AUTO IRIS MODE

Set the iris mode select switch to “A.” The iris of the lens will automatically be adjusted responding to the object brightness.

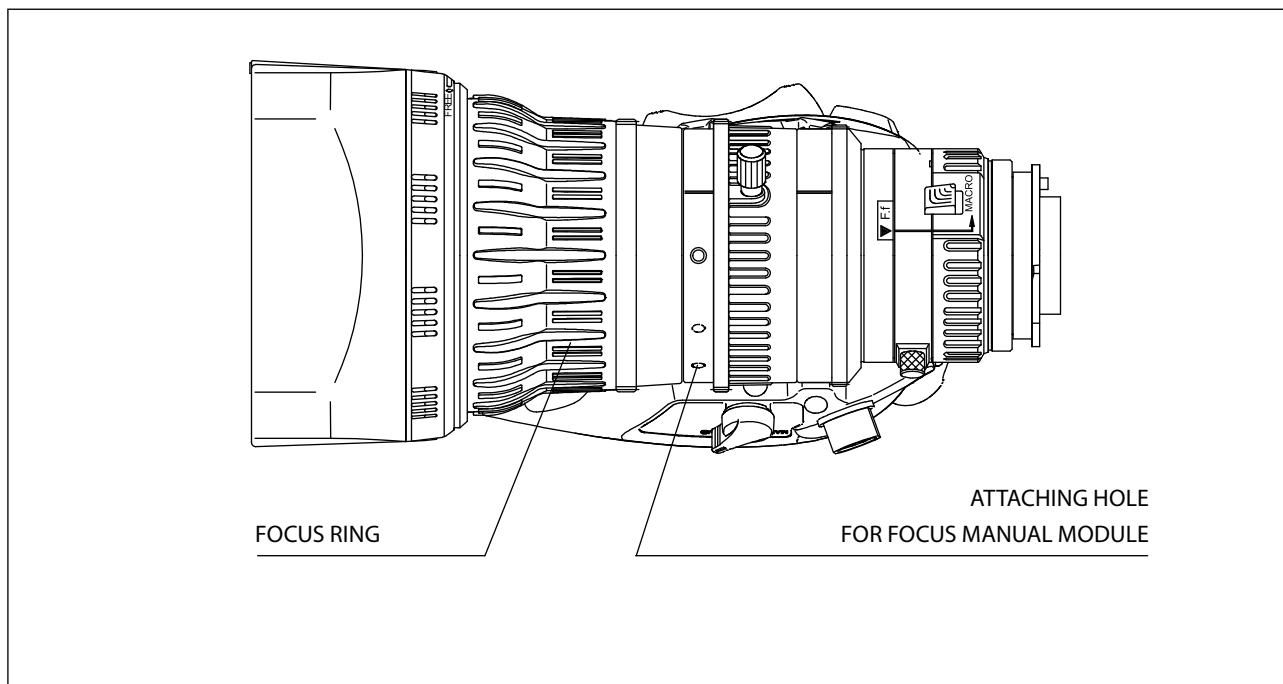
■ MANUAL MODE

- a. Set the iris mode select switch to “M.”
- b. Rotate the iris ring by hand to adjust the iris.

Clockwise rotation of the ring causes the iris to move toward the closed side and counterclockwise rotation toward the open side.

Note. Although the iris operation mode is in Manual, the iris is adjusted automatically while the iris momentary switch is being pressed.

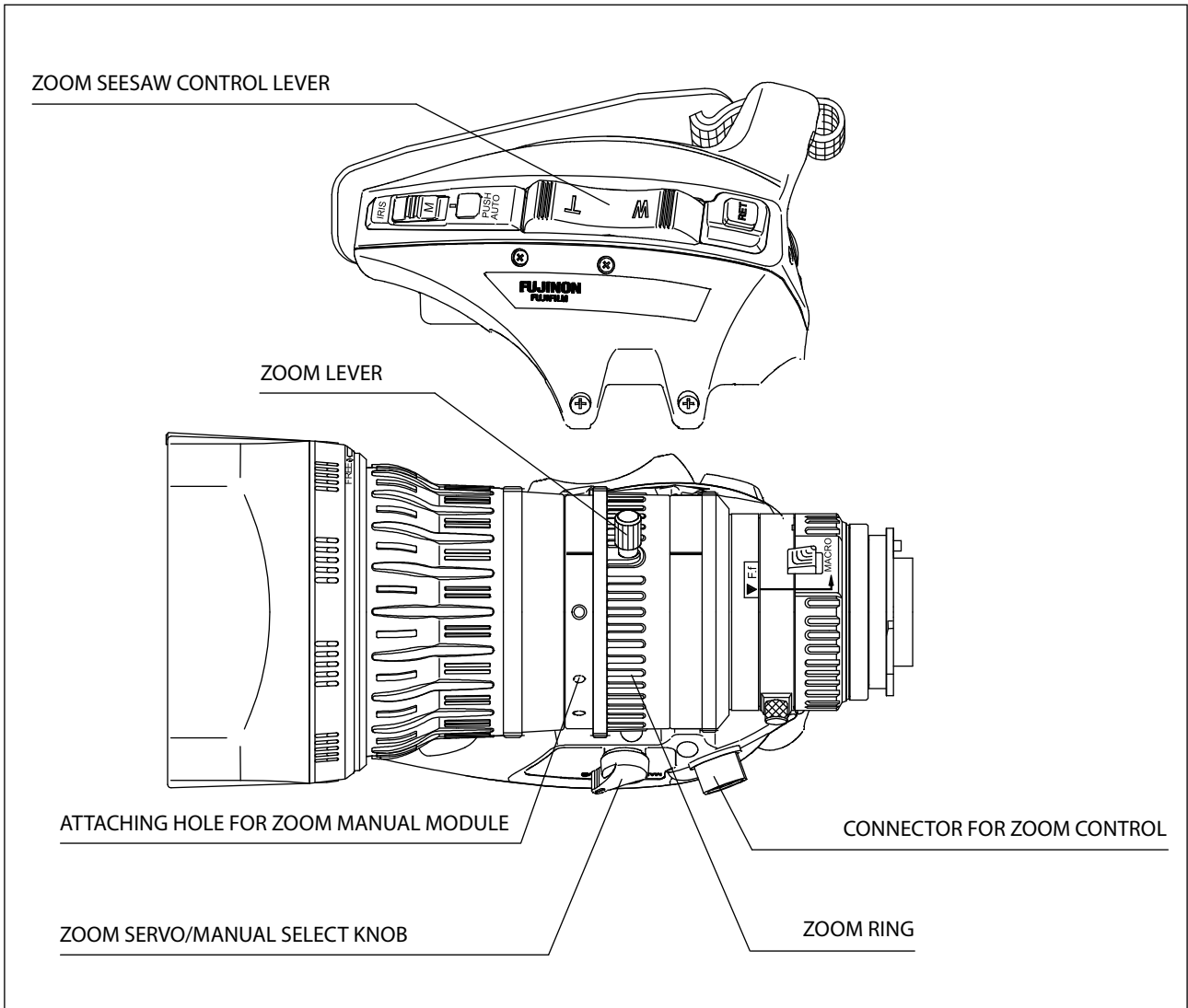
FOCUS OPERATION



Focusing can be done by directly rotating the focus ring by hand. Rotate the focus ring clockwise from the camera side to focus on an object on the near side.

The remote control operation is also available with optional accessories.

ZOOM OPERATION



The zoom can be operated in the following four operation modes.

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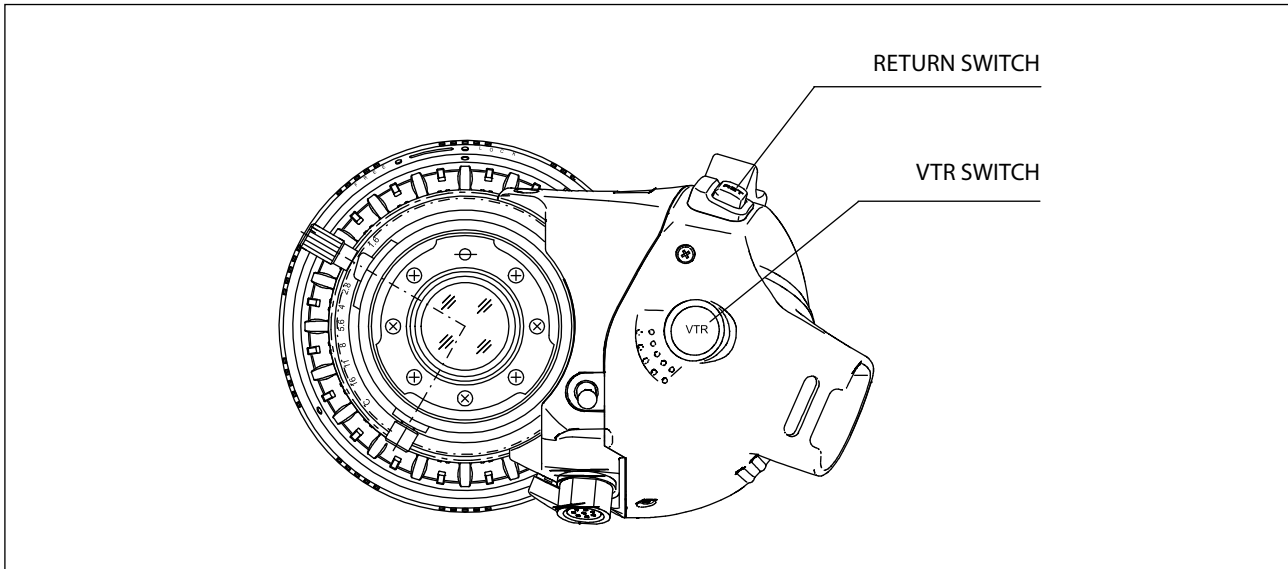
For the operating instruction in each mode, refer to the description on each mode.

The remote control operation is also available with optional accessories.

(1) Operation by Zoom Seesaw Control Lever

- a. Set the zoom servo/manual select knob to “SERVO.”
- b. Press the zoom seesaw control lever. Press T-side of the lever to zoom to the tele side, and the W-side to zoom to the wide side. For the speed control, adjust the strength to press the lever. Pressing the lever deeply makes the zoom speed faster, and shallowly makes slower.

(2) QuickZoom Operation



In quickzoom operation, pressing a switch moves the zoom to the tele end quickly. The operator can use this function in such occasions listed below.

- When rapid zooming to the tele end is required to focus on the object precisely.
- To confirm, in a moment, the composition of the image in the extreme closeup shot.

Either the VTR switch or the return switch can be used as a quickzoom switch. Set switch 1 or 2 in the area of “Function & Mode Select Switches” (see page 13) to ON. When switch 1 is set to ON, the VTR switch acts as a quickzoom switch, while when switch 2 is set to ON, the return switch acts as that switch. In the following description, the VTR switch or the return switch is called quickzoom switch.

Operation

- a. Set the zoom servo/manual select knob to “SERVO.”
- b. Keep pressing the quickzoom switch until the zoom reaches the tele end.
- c. While pressing the quickzoom switch, perform precise focusing or confirm the composition of the image in the extreme closeup shot.
- d. Release the quickzoom switch.
 - The zoom will move to its former position quickly.(If you press the quickzoom switch again before the zoom returns to its former position, the quickzoom movement restarts. After this operation, if the switch is released, the zoom will move to its former position quickly.)

Note 1. In quickzoom operation, the zoom moves at the maximum speed.

Note 2. If you press the quickzoom switch while pressing the zoom seesaw control lever, the zoom moves in auto cruising zoom operation, not in quickzoom operation.

(3) Auto Cruising Zoom Operation

In auto cruising zoom operation, the zoom moves to the tele end or the wide end at a constant speed. This function is effective when a constant slow zoom speed is required across the zooming range.

Either the VTR switch or the return switch can be used as an auto cruising zoom switch. Set switch 1 or 2 in the area of "Function & Mode Select Switches" (see page 13) to ON. When switch 1 is set to ON, the VTR switch acts as an auto cruising zoom switch, while when switch 2 is set to ON, the return switch acts as that switch. In the following description, the VTR switch or the return switch is called auto cruising zoom switch.

Operation

- a. Set the zoom servo/manual select knob to "SERVO."
- b. Press the zoom seesaw control lever and adjust the zoom speed.
- c. While pressing the zoom seesaw control lever, press the auto cruising zoom switch.
 - The auto cruising zoom function will work.
- d. Release your hand from the zoom seesaw control lever.
 - The zoom will move to the tele end or the wide end at a constant speed that is determined when the auto cruising zoom switch is pressed.

Releasing

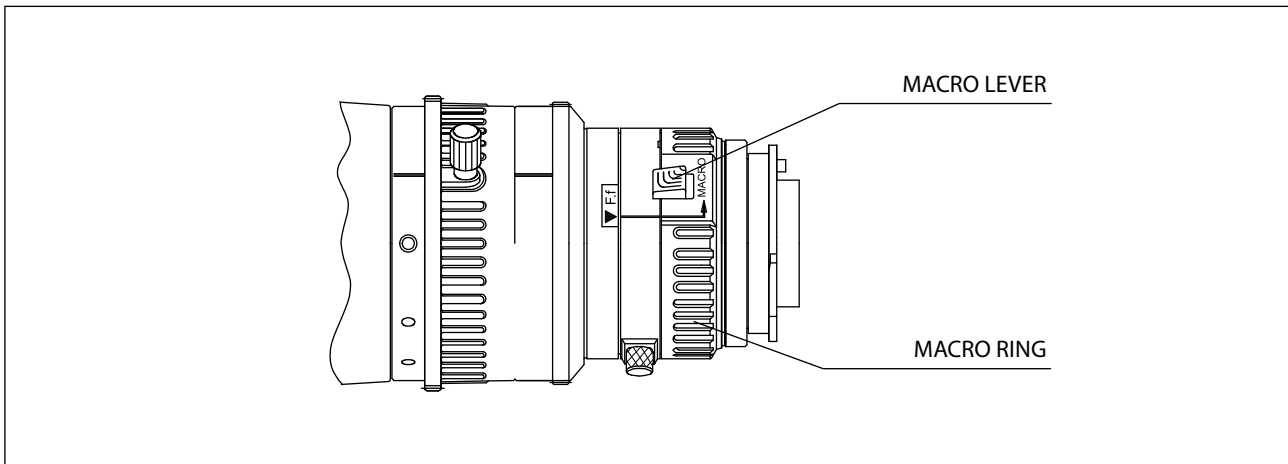
There are three ways to release the auto cruising zoom operation mode.

1. Press the zoom seesaw control lever on the side of the direction of the zoom movement.
 - When the amount of displacement of the zoom seesaw control lever exceeds that determined when the auto cruising zoom operation is set, the auto cruising zoom operation mode will be released.
After released, the zoom will move continuously toward the same direction as moved before releasing. (In this way, the auto cruising zoom operation mode can be released maintaining the smooth zoom movement.)
2. Press the zoom seesaw control lever on the reverse side of the direction of the zoom movement.
 - The auto cruising zoom operation mode will be released immediately, and the zoom will move toward the reverse direction.
3. Press the auto cruising zoom switch.
 - The auto cruising zoom operation mode will be released immediately, and the zoom will stop.

(4) Manual Operation

- a. Set the zoom servo/manual select knob to "MANUAL."
- b. Rotate the zoom ring directly or using the zoom lever.
Clockwise rotation of the zoom ring, viewed from the camera side, moves the zoom to the wide side, and counterclockwise rotation to the tele side.
(When rotating the zoom ring directly, it is recommended to remove the zoom lever for smooth operation.)

MACRO OPERATION



Carry out the following steps for the macro operation (taking a closeup shot).

- a. Rotate the focus ring fully toward the infinity side.
- b. While pulling the macro lever toward the mount side, rotate the macro ring toward the arrow as far as it goes.
- c. Focus the lens by controlling the zoom.

Note. It is also possible to shoot an object while the macro ring is in an intermediate position. In this case, the values of the M.O.D. and the object area at M.O.D. are those of between a normal and a closeup shot.

■ PROCEDURE TO CANCEL

Rotate the macro ring in the opposite direction of the arrow until the macro lever automatically returns to its original position.

OTHER FUNCTIONS

Fig. A

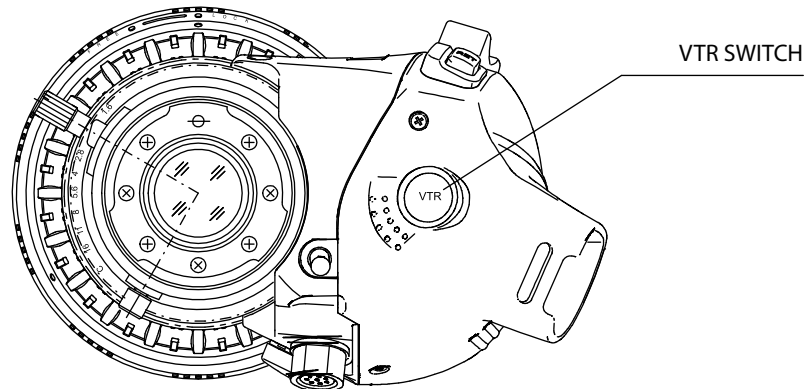
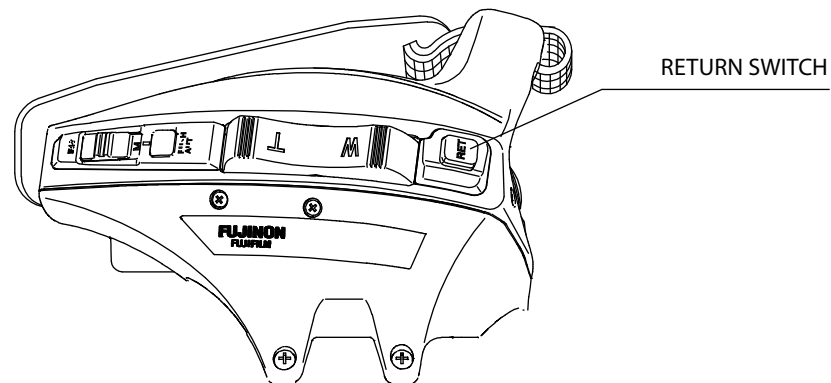


Fig. B



■ VTR Switch (Fig. A)

Operation of this switch starts or stops the VTR linked to the camera.

Note. If the setting of the function & mode select switches is properly arranged, this switch works as a quickzoom switch or an auto cruising zoom switch. (refer to page 13)

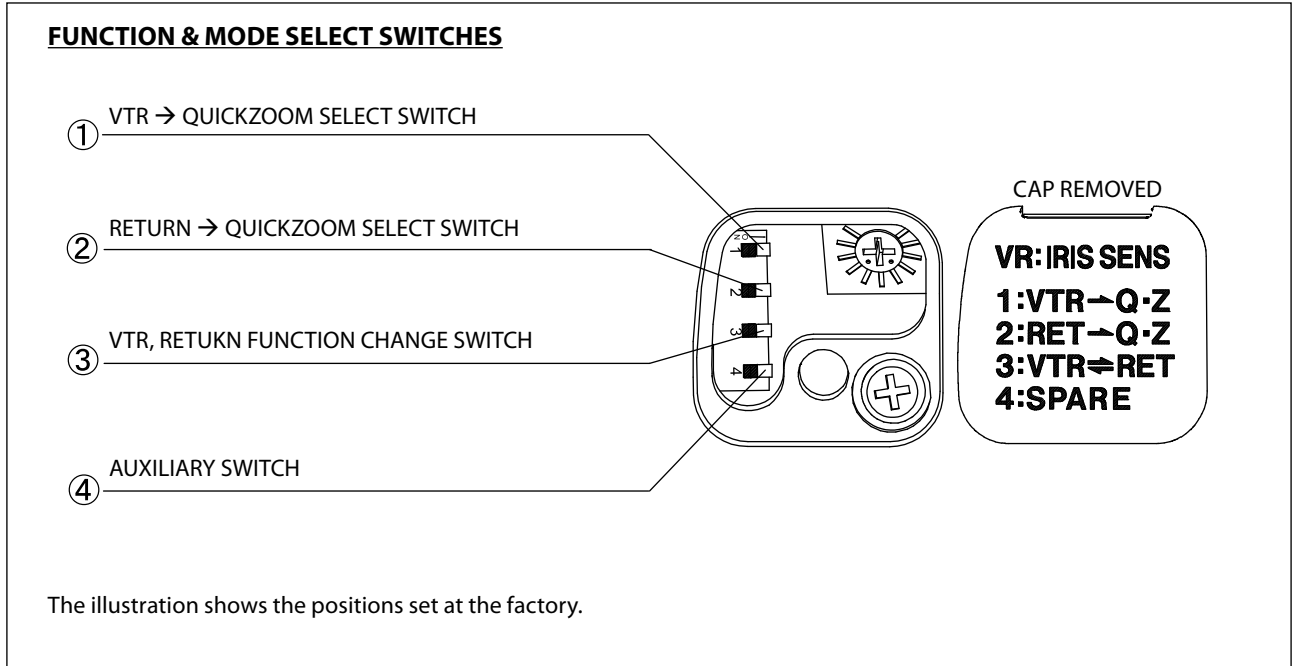
■ Return Switch (Fig. B)

While pressing this switch, the return video picture can be seen through the viewfinder of the camera.

Note. If the setting of the function & mode select switches is properly arranged, this switch works as a quickzoom switch or an auto cruising zoom switch. (refer to page 13)

ABOUT FUNCTION & MODE SELECT SWITCHES

The function of some switches incorporated in this lens can be changed to other functions. The function can be changed by setting switches in the function & mode select switches. The function & mode select switches are accessible by removing the round rectangular rubber cap on the front of the drive unit.



(1) VTR → QuickZoom Select Switch

This switch changes the function of the VTR switch to that of the quickzoom switch. (The function of the VTR switch incorporated in the zoom rate demand unit linked to this lens is also changed to that of the quickzoom switch.)

(2) Return → QuickZoom Select Switch

This switch changes the function of the return switch to that of the quickzoom switch. (The function of the return switch incorporated in the zoom rate demand unit linked to this lens is also changed to that of the quickzoom switch.)

(3) VTR, Return Function Change Switch

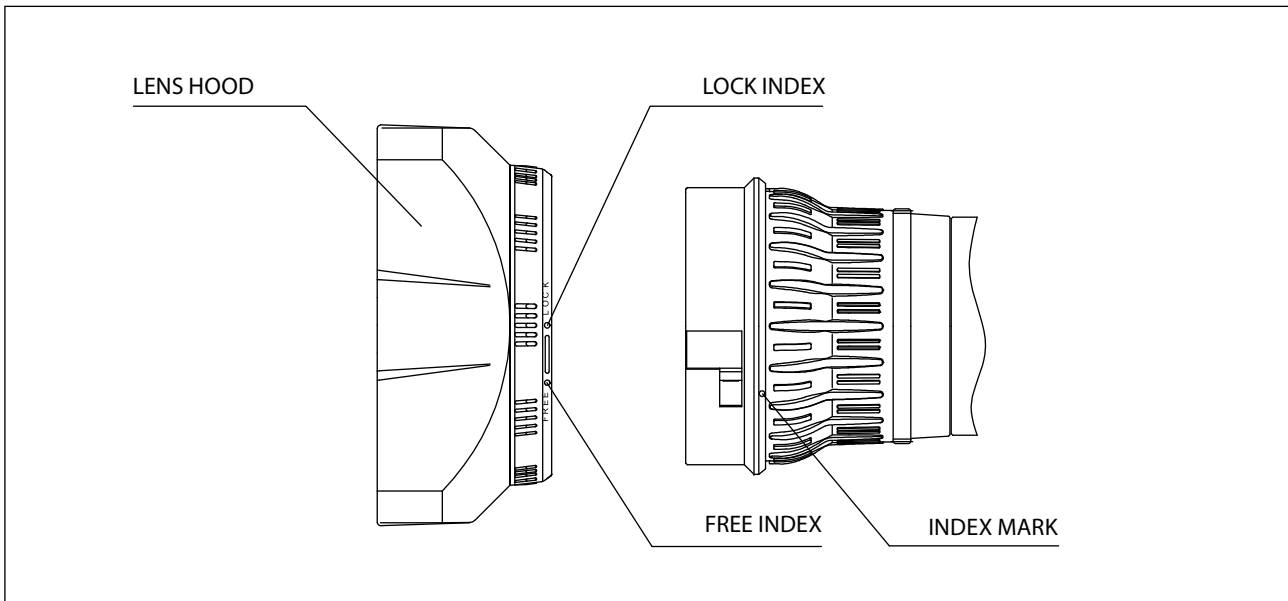
The functions of the VTR switch and the return switch can be changed to each other.

Setting of Switch	Function of VTR Switch	Function of Return Switch
OFF	VTR Switch	Return switch
ON	Return switch	VTR Switch

(4) Auxiliary Switch

An auxiliary switch.

ATTACHING/DETACHING LENS HOOD



The lens hood enclosed with the product decreases the extra light entering the lens in shooting. To use it, attach it to the front of the lens in the following procedure.

■ ATTACHING

- Align FREE index on the lens hood with the index point on the focus ring and insert the lens hood into the focus ring.
- Rotate the lens hood clockwise from the front view of the lens until it clicks.

■ DETACHING

- Rotate the lens hood counterclockwise from the front view of the lens so that FREE index on the lens hood is aligned with the index point on the focus ring. (It may be necessary to rotate strongly since there is a positioning stopper inside.)
- Pull the lens hood to remove.

MAINTENANCE

■ CLEANING THE LENS

Prepare lens cleaning liquid and lens cleaning paper on the market.

- a. First use a soft brush or blower brush to brush dust off the surface of the lens.
- b. Fold the cleaning paper to an adequate size, and dip a part of it into the liquid. Lightly wipe the lens from the center to the periphery while drawing a spiral with the wet paper part. Repeat this operation using new paper until the lens is thoroughly cleaned.

■ REMOVING THE MOISTURE

When the lens main body is wet, first wipe the water on the external part with dry cloth immediately. Then put it together with desiccant into a vinyl bag for sealing to remove the moisture inside.

■ STORAGE

If it is assumed that the lens will not be used for a long term, store it in a place where high temperature, much moisture or corrosive gas is absent.

■ CAUTION

This lens is composed of the optical unit and drive unit.

Never remove the screws that fasten these two units. If the units are separated, it will be required to readjust mechanism in the drive unit.

■ INSPECTION

If an abnormality occurs on the lens, contact our sales agent or Fujinon service department.

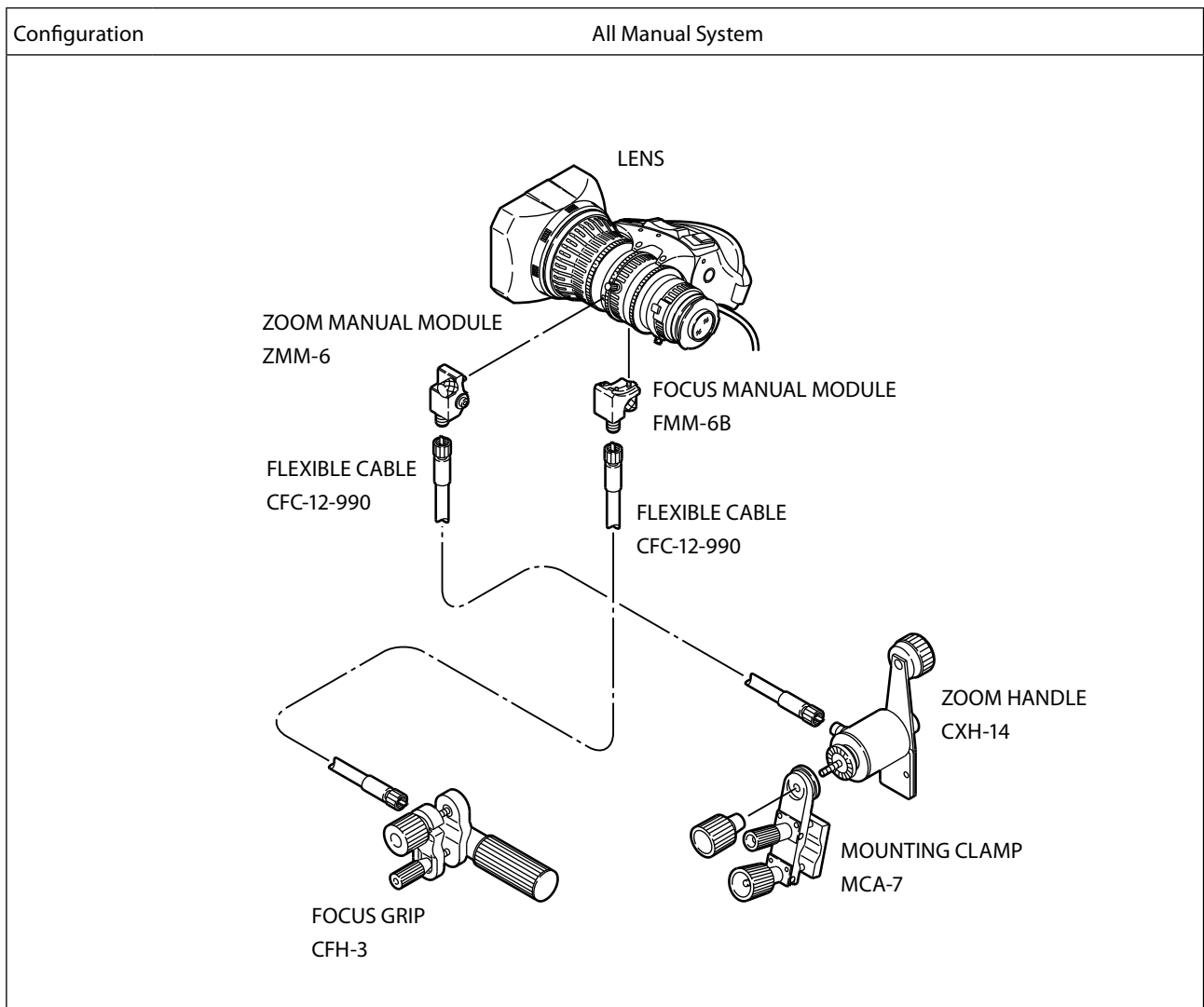
To maintain the high performance for a long term for use, we recommend that a periodic inspection is conducted at least once a year.

Note that we may not be able to inspect and repair our products which have been remodeled on the user's end.

OPTIONAL ACCESSORIES

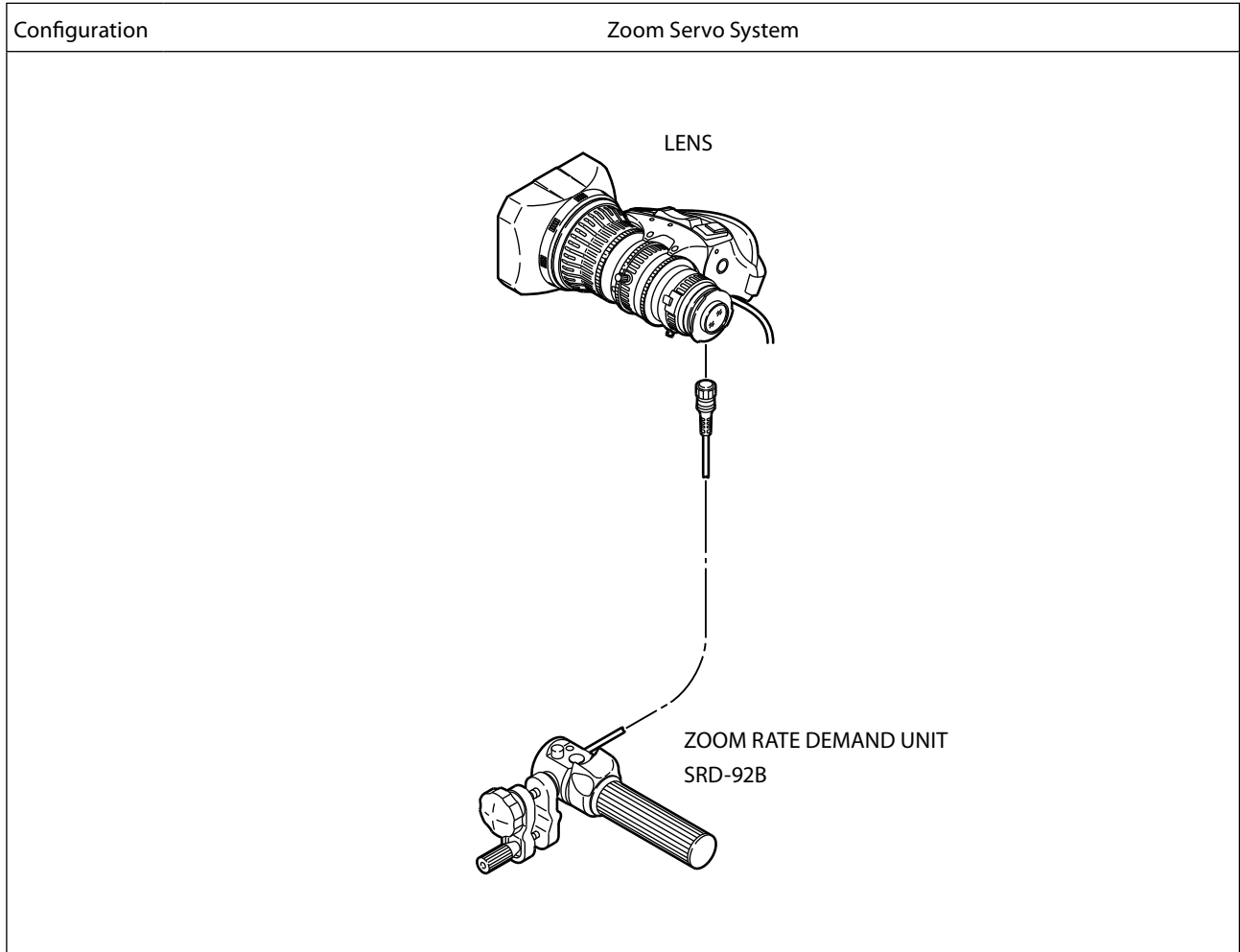
■ All Manual System (Manual Focus, Manual Zoom)

ACCESSORY NAME	MODEL	REMARKS
Focus Manual Module	FMM-6B	Manual module for driving focus.
Focus Grip	CFH-3	Grip for focus manual operation.
Zoom Manual Module	ZMM-6	Manual module for driving zoom.
Zoom Handle	CZH-14	Handle for zoom manual operation.
Flexible Cable	CFC-12-990	For mechanical connection either between lens and CFH or between lens and CZH.
Mounting Clamp	MCA-7	Used with either CFH or CZH for its installation.



■ Zoom Servo System

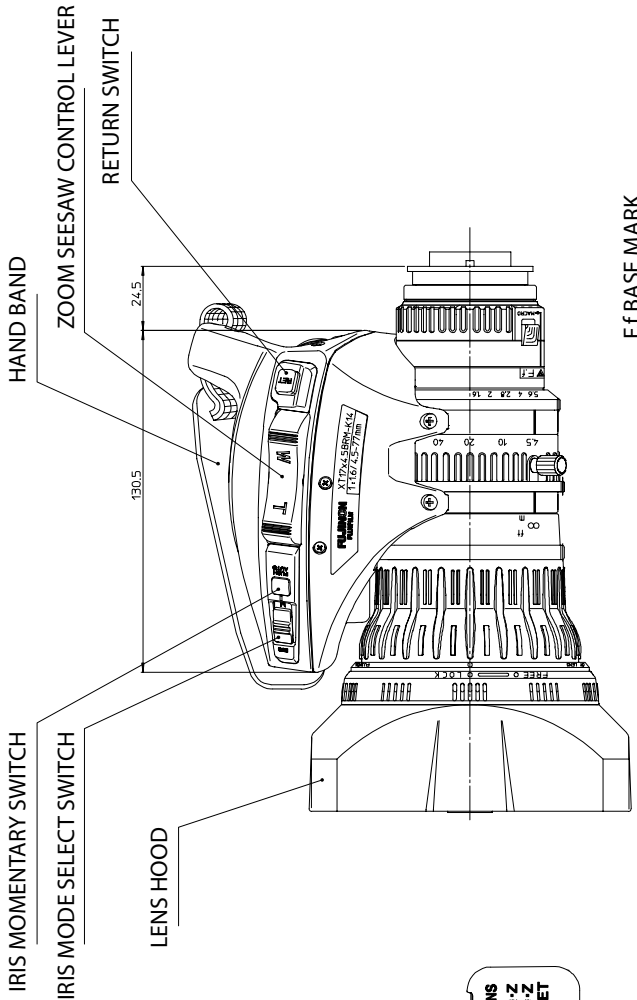
ACCESSORY NAME	MODEL	REMARKS
Zoom Rate Demand Unit	SRD-92B	Control unit for zoom operation.



SPECIFICATIONS

ITEM	LENS	XT17 x 4.5BRM
Application		1/3" Format Color Camera (Prism Optical System)
Focal Length		4.5 – 77 mm
Zoom Ratio		17x
Maximum Relative Aperture (F No.)		F1.6 (4.5 – 77 mm)
Maximum Photometric Aperture (T No.)		T1.7
Iris Range		F1.6 - F16, / Closed
Image Format		5.23 x 2.94 mm (Ø6.0 mm)
Flange Focal Length (in air)		31 mm (Adjustable Range: ±0.4 mm)
Minimum Object Distance		0.95 m (0.05 m in macro operation)
Field Angle	Hor. Ver. Diag.	60° 19' – 3° 53' 36° 11' – 2° 11' 67° 23' – 4° 28'
Object Area at M.O.D.	at Wide End at Tele End	500 x 281 mm 30 x 17 mm
Clear Aperture of Lens	Front Rear	70.5 mm 20.1 mm
Filter Screw		M82 x 0.75
Iris Control		Servo or Manual
Zoom Control		Servo (Op. Time: 1.0 - 15 s) or Manual
Focus Control		Manual
Mount		Bayonet Mount
Current Consumption	(at 12V DC)	80 mA (Quiescent) 310 mA (Maximum)
Mass (without Lens Hood)		1.28 kg (Approx.)

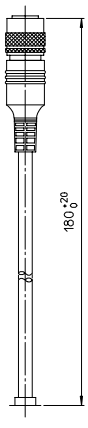
(UNLESS OTHERWISE SPECIFIED) UNIT: mm



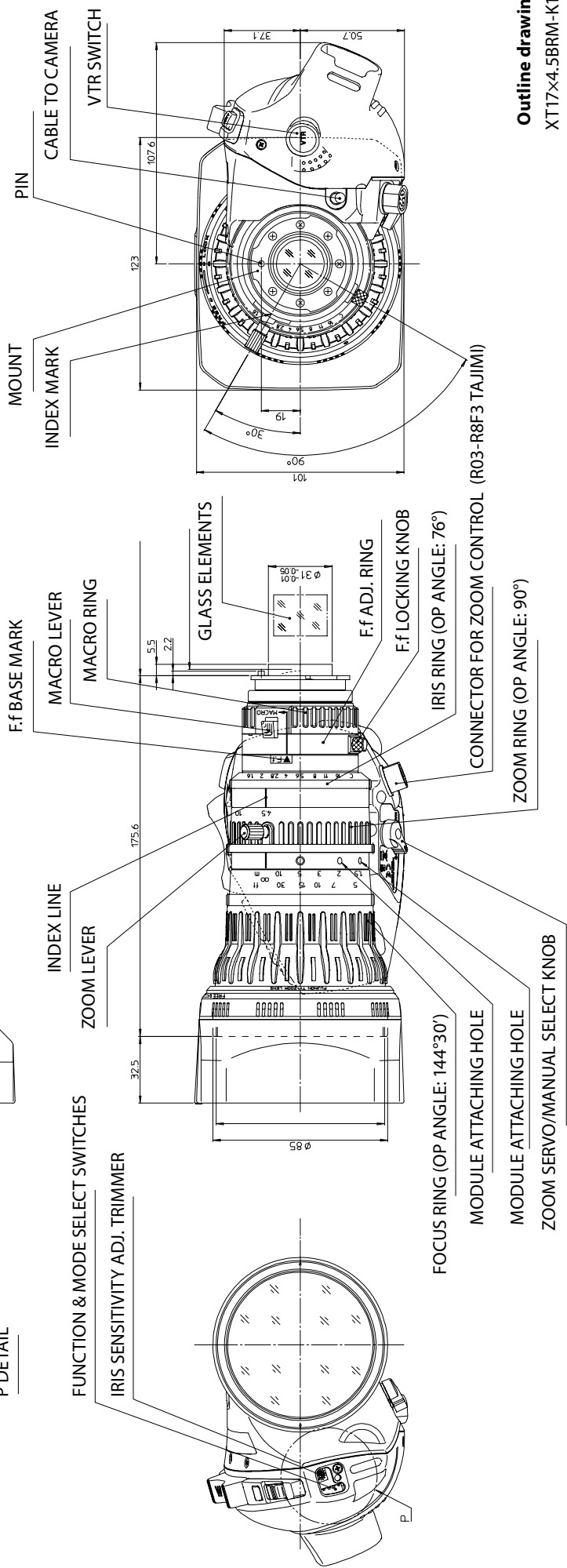
VR:IRIS SENS
 1:VTR-G-Z
 2:RET-G-Z
 3:VTR-RET
 4:SPARE



P DETAIL

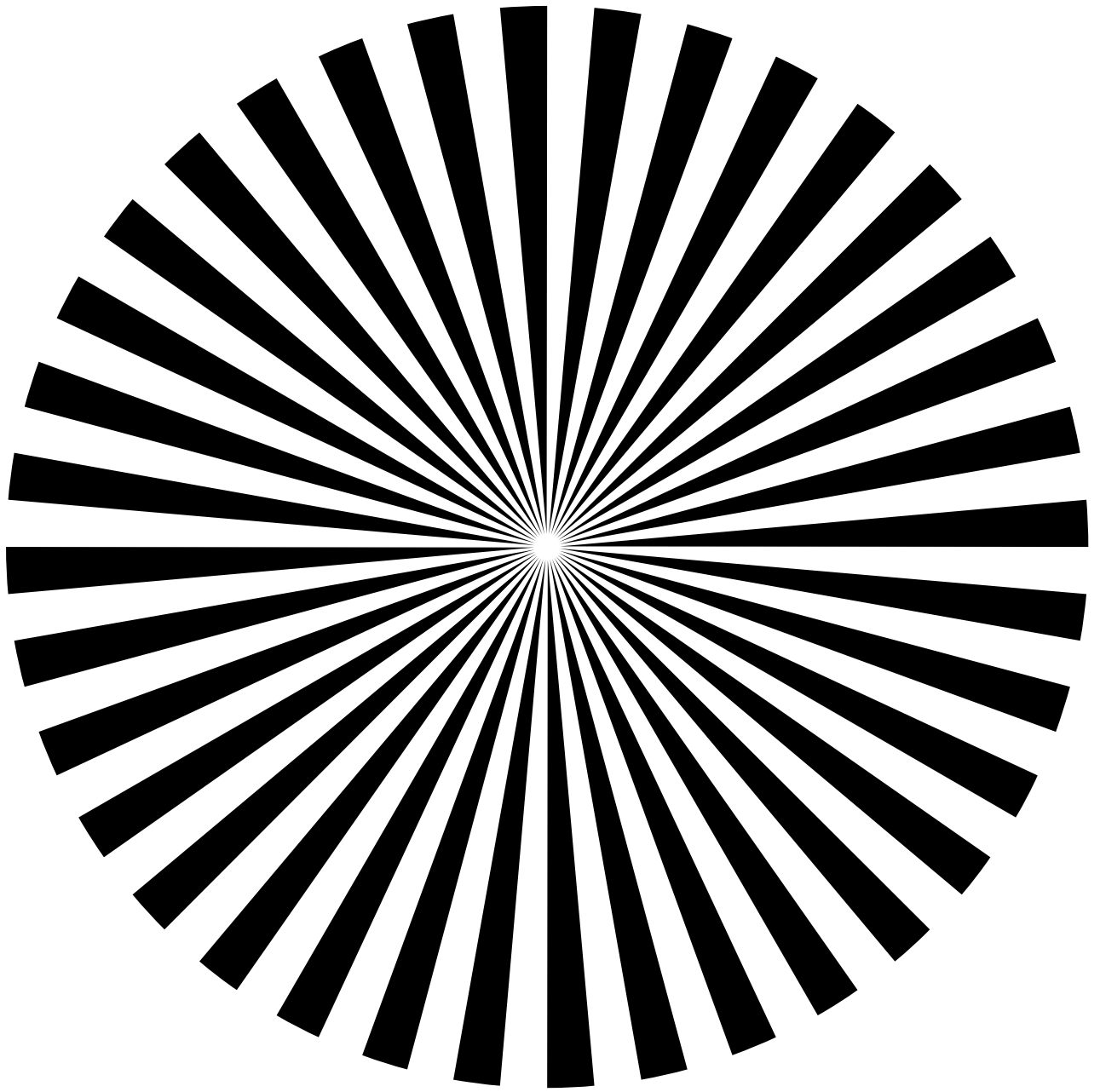


CABLE TO CAMERA
 (CONNECTOR: SN-10-12P Sam Woo)



Outline drawing
 XT17X4.5BRM-K14

CUT LINE



SIEMENS STAR

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